DOCUMENT RESUME

ED 342 670 SE 052 698

AUTHOR	Cadoree, Michell, Comp.
TITLE	Career Opportunities in Science and Technology. LC Science Tracer Bullet.
INSTITUTION	Library of Congress, Washington, DC. Science and Technology Div.
REPORT NO	ISSN-0090-5232; TB-91-6
PUB DATE	Jul 91
NOTE	11p.
AVAILABLE FROM	Science and Technology Division, Library of Congress, 10 First Street, S.E., Washington, DC 20540 (free).
PUB TYPE	Reference Materials - Bibliographies (131)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Adolescent Literature; Career Awareness; *Employment Opportunities; Resource Materials; *Science Careers
IDENTIFIERS	*Technology Education

ABSTRACT

This guide is intended for those who wish to investigate career possibilities and opportunities in science and technology. Sources providing descriptions of jobs and careers in these areas, and training and courses of study required, the potential job markets, and the rewards that are possible in choosing such a career are given. This Tracer Bullet updates and supersedes TB 86-10. Not meant to be a comprehensive bibliography, this compilation is designed--as the name of the series implies--to put the reader "on target." Included are: (1) subject headings used by the Library of Congress, under which books on career opportunities in science and technology can be located in most card, book, and online catalogs; (2) basic texts; (3) specialized titles; (4) related titles; (5) juvenile literature; (6) Washington/Baltimore metropolitan area job opportunities; (7) abstracting and indexing services that index relevant journal articles and other literature; (8) journals in which articles on careers and career planning can be found; (9) representative journal articles on careers and career planning; (10) selected materials available in the Science Reading Room pamphlet box collection; and (11) addresses of additional sources of information. (KR)

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ED342670

LC Science Tracer Bullet

Science Reference Section, Science and Technology Division
Library of Congress, 10 First Street, S.E., Washington, D.C. 20540

ISSN 0090-5232

CAREER OPPORTUNITIES IN SCIENCE AND TECHNOLOGY

(Compiled by Michelle Cadoree

TB 91-6 **July 1991**

SCOPE As new fields of science and technology emerge, so do the career opportunities. The physical and life sciences, the applied sciences, and the high technology industries provide stimulating and enriching opportunities for those with vocational training, college diplomas, and advanced degrees.

This guide is intended for those who wish to investigate career possibilities and opportunities in science and technology. Sources providing descriptions of jobs and careers in these areas, the training and courses of study required, the potential job markets, and the rewards that are possible in choosing such a career are given. This *Tracer Bullet* updates and supersedes *TB* 86-10. Not meant to be a comprehensive bibliography, this compilation is designed--as the name of the series implies--to put the reader "on target."

SUBJECT HEADINGS used by the Library of Congress, under which books on career opportunities in science and technology can be located in most card, book, and online catalogs, include the following:

SCIENCE--VOCATIONAL GUIDANCE (Highly relevant)
TECHNOLOGY--VOCATIONAL GUIDANCE (Highly relevant)
See also subdivision VOCATIONAL GUIDANCE under specific professions, fields of knowledge or skills, e.g. AIR TRAFFIC CONTROL--VOCATIONAL GUIDANCE; ENGINEERING--VOCATIONAL GUIDANCE; TELECOMMUNICATION--VOCATIONAL GUIDANCE; WELDING--VOCATIONAL GUIDANCE
JOB VACANCIES--(name of city or state) (Relevant)
HIGH TECHNOLOGY INDUSTRIES--VOCATIONAL GUIDANCE (Relevant)
See also subdivision VOCATIONAL GUIDANCE under specific industries e.g., AEROSPACE INDUSTRIES--VOCATIONAL GUIDANCE; ELECTRONIC INDUSTRIES--VOCATIONAL GUIDANCE
WOMEN IN SCIENCE (Relevant)
See also specific disciplines e.g., WOMEN IN AERONAUTICS; WOMEN IN MEDICINE
ENGINEERS--UNITED STATES--RECRUITING (Related)
See also subdivision RECRUITING under specific professions, or occupational groups, e.g., NURSES--UNITED STATES--RECRUITING; SCIENTISTS--UNITED STATES--RECRUITING

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SUBJECT HEADINGS (cont).

SCIENTISTS--EMPLOYMENT--UNITED STATES (Related)
See also subdivision EMPLOYMENT under professional or occupational groups (Related), e.g., ENGINEERS--EMPLOYMENT--UNITED STATES; MEDICAL PERSONNEL--EMPLOYMENT--UNITED STATES
SCIENTISTS--SUPPLY AND DEMAND (Related)
See also subject headings for professional and occupational groups following the subdivision SUPPLY AND DEMAND (Related), e.g., AUDIOLOGISTS--SUPPLY AND DEMAND; ENGINEERS--SUPPLY AND DEMAND; NURSE PRACTICIONERS--SUPPLY AND DEMAND
WOMEN SCIENTISTS (Related)
See also specific disciplines, e.g., WOMEN ENGINEERS; WOMEN GEOLOGISTS
CAREER EDUCATION--UNITED STATES (More general)
SCIENTISTS--UNITED STATES (More General)
VOCATIONAL GUIDANCE--UNITED STATES (More general)
See also specific cities or states, e.g., VOCATIONAL GUIDANCE--MARYLAND; VOCATIONAL GUIDANCE--WASHINGTON METROPOLITAN AREA
VOCATIONAL GUIDANCE FOR WOMEN (More general)

BASIC TEXTS

Career employment opportunities directory. Editor-in-chief, Alvin Renetzky. Santa Monica, Calif., Ready Reference Press, c1980. 4 v. **HF5382.5.U5C265**
See especially v. 3, Engineering and computer sciences and v. 4, Sciences.

Career information center. 2nd ed. Encino, Calif., Glencoe [New York,N.Y.], Macmillan, c1984. 13 v. **HF5382.5.U5C32 1984** B&E
Contents: v. 1. Administration, business, and office.--2. Agribusiness, environment, and natural resources.--3. Communications and the arts.--4. Construction.--5. Consumer, homemaking, and personal services.--6. Engineering, science, and technology.--7. Health.--8. Hospitality and recreation.--9. manufacturing.--10. Marketing and distribution.--11. Public and community service.--12. Transportation.--13. Master index.

The Encyclopedia of careers and vocational guidance. William E. Hopke, editor-in-chief. 8th ed. Chicago, J. G. Ferguson Pub. Co, c1990. 4 v.
HF5381.E52 1990 B&E
Contents: v. 1. Industry profiles.--2. Professional careers.--3. General and special careers.--4. Technicians' careers.

B&E Business and Economics
MRR Main Reading Room
N&CPR Newspaper and Current Periodical Reading Room

Handbook and guide for selecting a career and preparing for the future. New 1987-88 ed. New York, Research and Education Association, c1987. 578 p. Includes bibliographies. **HF5382.5.U5H34 1987** B&E

Malnig, Lawrence R., *and* Anita Malnig. **What can I do with a major in--?: how to choose and use your college major**. Ridgefield, N.J., Abbott Press, c1984. 240 p. **HF5382.5.U5M34 1984** B&E

Mitchell, Joyce Slayton. **The College Board guide to jobs and career planning**. New York, College Entrance Examination Board; Macmillan [distributor], c1990. 306 p. **HF5381.M557 1990** B&E

Occupational briefs. Moravia, N.Y., Chronicle Guidance Publications, 1984- 5 v. (loose-leaf) **HF5382.5.U5O283 1984** B&E

Occupational outlook handbook. Washington, U.S. Dept. of Labor, Bureau of Labor Statistics. Govt. Print. Off., 1949- **HD8051.A62** B&E and Pamphlet box*

Professional careers sourcebook: an information guide for career planning. Detroit, Mich., Gale Research, c1990- **HF5382.5.U5P76**

VGM's careers encyclopedia. Edited by Craig T. Norback. 2nd ed. Lincolnwood, Ill., VGM Career Horizons, c1988. 484 p. **HF5382.5.U5C337 1988**

SPECIALIZED TITLES

Brown, Sheldon S. **Opportunities in biotechnology careers**. Lincolnwood, Ill., VGM Career Horizons, c1989. 147 p. **TP248.2.B77 1989**
Bibliography: p. 144-147.

Calderone, Robert. **The complete aviation/aerospace career guide**. Blue Ridge Summit, Pa., Aero, c1989. 254 p. **TL561.C35 1989***

Career choices for the 90's for students of computer science. Career Associates. New York, Walker, 1990. 116 p. **QA76.25.C29 1990***
Includes bibliographical references.

Career choices for the 90's for students of mathematics. Career Associates. New York, Walker, 1990. 205 p. **HF5382.5.U5C2555 1990**
Bibliography: p. 193-194.

Careers in engineering. Lincolnwood, Ill., VGM Career Horizons, c1989. 147 p. Bibliography: p. 142. **TA157.C295 1989***

The Complete guide to environmental careers. The CEIP Fund. Washington, Island Press, c1989. 328 p. **TD170.2.C66 1989***
Includes bibliographical references.

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* Available in reference collection, Science Reading Room

Duncan, Jane Caryl. **Careers in veterinary medicine**. New York, Rosen Pub. Group, 1988. 129 p. **SF756.28.D86 1988**
Bibliography: p. 123-124.

Gale, Barry, *and* Linda Gale. **The national career directory: an occupational information handbook**. New York, Arco Pub. Co., c1979. 240 p. **HF5382.5.U5G3**
Lists addresses of organizations providing information on specific careers.

Karni, Karen R., *and* Jane Sidney Oliver. **Opportunities in medical technology careers**. Lincolnwood, Ill., VGM Career Horizons, c1990. 161 p.
Bibliography: p. 160-161. **RB37.6.K37 1990**

Krueger, Gretchen Dewailly. **Opportunities in petroleum careers**. Lincolnwood, Ill., VGM Career Horizons, c1990. 145 p. **HD9560.5.K78 1990**
Bibliography: p. 143-145.

Kling, Julie Lepick. **Opportunities in computer science careers**. Lincolnwood, Ill., VGM Career Horizons, c1984. 144 p. **QA76.25.K525 1984**
Bibliography: p. 143-144.
Includes a listing of professional organizations.

Noronha, Shonan F. R. **Careers in communications**. Lincolnwood, Ill., VGM Career Horizons, c1987. 166 p. **HE152.5.N67 1987**
Includes bibliographies.

Peterson's engineering, science, and computer jobs. Princeton, N. J., Peterson's Guides, c1984- **TA157.P44 1990***

Rucker, T. Donald, *and others*. **Careers in medicine: traditional and alternative opportunities**. Garrett Park, Md., Garrett Park Press, c1990. 346 p.
Includes bibliographical references. **R690.R83 1990***
Revised ed. of **Planning Your Medical Career**, c1986.

Swanson, Barbara Mardinly. **Careers in health care**. Lincolnwood, Ill., VGM Career Horizons, c1989. 286 p. **R697.A4S93 1989**

VGM's handbook of scientific & technical careers. Edited by Craig T. Norback. Lincolnwood, Ill., VGM Career Horizons, c1990. 120 p. **TA157.V46 1990***

White, William C., *and* Donald N. Collins. **Opportunities in agriculture careers**. Lincolnwood, Ill., VGM Career Horizons, c1988. 150 p. **S494.5.A4W48 1988**
Bibliography: p. 147-150.

Winkler, Connie. **Careers in high tech**. New York, Prentice Hall Press, c1987. 220 p. **HD8039.H54W56 1987***
Bibliography: p. 218.

Woodburn, John H. **Opportunities in energy careers**. Lincolnwood, Ill., VGM Career Horizons, c1985. 150 p. **TJ163.2.W64 1985**
Bibliography: p. 149-150.

RELATED TITLES

Collard, Betsy A. **The high-tech career book: finding your place in today's job market**. Los Altos, Calif., W. Kaufmann, c1986. 273 p.
Bibliography: p. 252-254. **HF5382.5.U5C54 1986**

Coxford, Lola M. **Resume writing made easy for high tech**. Scottsdale, Ariz., Gorsuch Scarisbrick, c1987. 143 p. **HF5383.C693 1987**
Bibliography: p. 143.

Dubrovin, Vivian. **Guide to alternative education and training**. New York, F. Watts, 1988. 111 p. **LC45.4.D83 1988**
Bibliography: p. 105-107.
A guide for high school students to different types of colleges and training schools that offer preparation for careers in fields requiring widely varying skills.

Employment guide for engineers and scientists: a practical job hunter's manual. Richard James Backe, editor-in-chief. Student ed. Washington, Institute of Electrical and Electronics Engineers, Piscataway, N.J., c1986. 2 v.
"IEEE catalog number UHO 174-3." **TA157.E47 1986***
Contents: v. 1 The real world.--v. 2. Directory of employers of IEEE members.

Feingold, S. Norman, *and* Maxine H. Atwater. **New emerging careers: today, tomorrow, and in the 21st century**. Garrett Park, Md., Garrett Park Press, c1988. 154 p. **HF5381.F46727 1988**
Includes bibliographies.

Golter, Gary D., *and* Deborah F. Yanuck. **High tech: a VGM career planner**. Lincolnwood, Ill., VGM Career Horizons, c1989. 112 p. **T49.5.G65 1989**
Revised ed. of **Opportunities in High Tech Careers**, c1987.

Lewis, Adele Beatrice. **The best resumes for scientists and engineers**. New York, Wiley, c1988. 247 p. **Q148.L47 1988***

O'Brien, Mark. **High-tech jobs for non-tech grads**. Englewood Cliffs, N.J., Prentice-Hall, c1986. 108 p. **T49.5.O27 1986**

Smith, Walter S., *and* Kala M. Stroup. **Science career exploration for women**. Washington, National Science Teachers Association, c1978. 77 p.
Bibliography: p. 75-77. **Q130.S6** and Pamphlet box*

Stearner, S. Phyllis. **Able scientists--disabled persons: biographical sketches illustrating careers in the sciences for able disabled students**. Oakbrook, Ill., J. Racila Associates, 1984. 65 p. **Q141.S76 1984**
Published for the Foundation for Science and the Handicapped, Inc.

Weinstein, Bob. **140 high-tech careers: everything you need to know now to pick the job of your future**. New York, Collier Books; London, Collier Macmillan, c1985. 206 p. **T21.W45 1985**

JUVENILE LITERATURE

Ayres, Carter M. **Pilots and aviation**. Minneapolis, Lerner Publications Co., c1990. 80 p. **TL547.A97 1990**

Describes the training and skills necessary to become a pilot and discusses other careers in aviation.

Career discovery encyclopedia. E. Russell Primm III, editor-in-chief. Chicago, J.G. Ferguson Pub., c1990. 6 v. **HF5381.2.C37 1990**

Includes 504 articles on all categories of occupations with such information as description of the job, earnings, educational and training requirements, and other pertinent facts.

Carter, Sharon. **Careers in aviation.** New York, Rosen Pub. Group, 1990. 127 p. **TL561.C39 1990**

Examines careers in aviation, including both flying and non-flying jobs such as crop duster, helicopter pilot, flight attendant, and air traffic controller.

Stamper, Judith Bauer. **What's it like to be a veterinarian**. Mahwah, N.J., Troll Associates, c1990. 32 p. **SF756.S73 1990**

WASHINGTON/BALTIMORE METROPOLITAN AREA JOB OPPORTUNITIES

Bendick, Marc, *and* Mary Lou Egan. **Jobs: employment opportunities in the Washington metropolitan area for persons with limited employment qualifications**. Washington, Greater Washington Research Center, 1988. 69 p. **HD6275.W3B46 1988**

A report prepared for the Greater Washington Research Center.
Bibliography: p. 63-69.

Camden, Thomas M., *and* Karen Tracy Polk. **How to get a job in Washington, DC: the insider's guide**. Chicago, Ill., Surrey Books, c1990. 380 p. **HF5382.75.U62W354 1990***

Federal career opportunities. Vienna, Va., Federal Research Service, Inc., 1980- **JK765.F44** N&CPR

Kraus, Krandall. **How to get a federal job: a guide to finding and applying for a job with the United States government anywhere in the United States**. New York, Facts on File, c1986. 180 p. **JK716.K69 1986** B&E

The Metropolitan Washington job bank. 3rd ed. Boston, B. Adams, c1987. 194 p. **HF5382.5.U6W355 1987** B&E

Summer employment directory of the United States. Cincinnati, Ohio, National Directory Service, Inc., 1954- **HF5382.5.U5S76** B&E

Contains listings for D.C., Maryland, and Virginia.

ABSTRACTING AND INDEXING SERVICES that index relevant journal articles and other literature are listed below. Some suggested terms are given as aids in searching. The following indexes are available in most public and college libraries:

Applied Science & Technology Index (1913-) **Z7913.I7***
See: Job Selection
Professions
Vocational Guidance

General Science Index (1978-) **Z7401.G46***
See: Job Selection
Scientists
Vocational Guidance

Government Reports Announcements & Index (1946-) **Z7916.G78***
See: Careers
Job Analysis
Jobs

Magazine Index (Available in several formats at LC)
See: Science--Vocational Guidance
Computers--Vocational Guidance
See also specific professions and occupations, e.g., Physicians--Employment; Veterinarians--Vocational Guidance

Monthly Catalog of United States Government Publications (1895-) **Z1223.A18*** MRR, N&CPR
See: Vocational Guidance
See also specific disciplines, e.g., Aeronautics--United States--Vocational Guidance; Meteorology--United States--Vocational Guidance

Readers' Guide to Periodical Literature (1900-) **AI3.R45** MRR
See: Scientists--Supply and Demand
See also specific disciplines, e.g., Geology--Supply and Demand; Geology --Occupations

Resources in Education (1966-) **L11.R28** MRR
See: Science Careers
See also Farm Occupations; Health Occupations

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room.

JOURNALS in which articles on careers and career planning can be found include:

Career development quarterly HF5381.A1V55
The Career guide: Dun's employment opportunities directory HF5382.5.U5D86 MRR
Career opportunity update (uncataloged) MRR
CPC annual HF5382.5.U5C6
Journal of career planning & employment LB2343.5.A15
Occupational outlook quarterly HF5382.5.U5O3

Many journals carry job listings in their respective fields. To find journal titles that carry job listings, you may wish to consult the following:

Feingold, S. Norman, *and* Glenda Ann Hansard-Winkler. **Where the jobs are: a comprehensive directory of 1200 journals listing career opportunities**. Garrett Park, Md., Garrett Park Press, c1989. 126 p.
HF5382.5.U5F46 1989 B&E

REPRESENTATIVE JOURNAL ARTICLES on careers and career planning:

Culotta, Elizabeth. Hot fields. **Science**, v. 252, May 24, 1991: 1118-1120. **Q1.S35**

Bezdek, Robert, *and* Jonathan D. Jones. Economic growth, technological change, and employment requirements for scientists and engineers. **Technological forecasting and social change**, v. 38, Dec. 1990: 375-391. **T174.T38**

Dollars and jobs. **Science**, v. 252, May 24, 1991: 1112-1113. **Q1.S35**

Dulek, Ronald E., *and* James A. Suchan. Application letters: a neglected area in the job search. **Business Horizons**, v. 31, no. 6, Nov./Dec. 1988: 70-75.
HF5001.B828

Holden, Constance. Career trends for the 90s. **Science**, v. 252, May 24, 1991: 1110-1111, 1116-1117. **Q1.S35**

Forecast: engineering employment to grow--but increasing competition for jobs. **Engineering digest**, v. 35, Feb. 1989: 56-8. **TA1.E5773**

Plawin, Paul, and Bertha Kainen. Job hunting blunders you don't have to make. **Changing times**, v. 42, Dec. 1988: 67, 69-70. **HC101.C47**

Stodden, John R. *and* Valerie A. Stodden. Human resources; aerospace careers: the 1990's and beyond. **Aviation week & space technology**, v. 131, Nov. 20, 1989: 30-42. **TL501.A8**

SELECTED MATERIALS available in the Science Reading Room pamphlet box collection include:

1991 career guide: the U. S. news salary survey. **U. S. news & world report**, September 17, 1990: 81-82, 84, 86, 88, 91, 97, 99.

Anderson, Audrey L. **Questions about careers in oceanography**. College Station, Dept. of Oceanography, Texas A&M University, 1988. 18 p.

Books on careers: chemical, computer and medical sciences, and engineering. **Science books & films** v. 23, May/June 1988: 293-296.
Also available as reprint C5, Reprint series on careers, #90-48S, from Directorate for Education and Human Resources Programs, American Association for the Advancement of Science, 133B H Street, N.W., Washington, D.C., 20005.

Books on careers in the sciences: earth science. **Science books & films**, v. 23, Jan./Feb. 1988: 161-163.
Also available as reprint C4, Reprint series on careers, #90-47S, from Directorate for Education and Human Resources Programs, American Association for the Advancement of Science, 133B H Street, N.W., Washington, D.C., 20005.

Books on careers in the sciences: life sciences and psychology. **Science books & films**, v. 23, Nov./Dec. 1987: 91-94.
Also available as reprint C3, Reprint series on careers, #90-46S, from Directorate for Education and Human Resources Programs, American Association for the Advancement of Science, 133B H Street, N.W., Washington, D.C., 20005.

Books on careers in the sciences: physics, astronomy, mathematics. **Science books & films**, v. 23, Sept./Oct. 1987: 27-31.
Also available as reprint C2, Reprint series on careers, #90-45S, from Directorate for Education and Human Resources Programs, American Association for the Advancement of Science, 133B H Street, N.W., Washington, D.C., 20005.

Careers in psychology. Edited by Elizabeth Kaplinski. Washington, American Psychological Association, c1986. 28 p.

Space for all: careers in science, mathematics, engineering, and computer science for students with disabilities. Washington, American Association for the Advancement of Science, Project on Science, Technology, and Disability, 1990. 19 p.

Super careers in information science. Edited by Sharon Pyrce Kaminecki. Washington, American Society for Information Science, 1981. 18 p.

Understanding the universe: a career in astronomy. Washington, American Astronomical Society, 1989. 22 p.

ADDITIONAL SOURCES OF INFORMATION

American Association for the Advancement of Science (AAAS)
Office of Opportunities in Science
1333 H Street, N.W.
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National Science Foundation
Public Information Branch
1800 G Street, N.W.
Washington, D.C. 20550
Telephone: (202) 357-9498

Scientific Manpower Commission
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